

I claim:

1st IC

1. A spraying device for storing, transporting, and dispensing a plurality of chemicals, comprising:

a container having a base, a sidewall having a rim opposite the base and defining an interior of said container, and a first hole and a second hole in said sidewall of the container, these holes sighting a line across the central vertical axis of the container, whereby said container is used for storing a plurality of containers that contain a predetermined suite of chemical concentrates;

an elongate rigid tubular handle assembly of predetermined length comprising a plurality of members joined in series from a first end which passes through said first hole in said sidewall of said container to a second end which passes through said second hole in said sidewall of said container with a venturi injector operably connected inline between said first end and said second end of said handle assembly;

a means of extending length of said elongate rigid tubular handle assembly comprising said first end, said second end, and a handlebar, all of predetermined lengths such that when in place, said handle assembly extends roughly horizontally across said interior of said container with midpoint of said handlebar centered over central vertical axis of said container;

For purposes of transporting said spraying device, an upward lifting force applied at the midpoint of said handlebar of said handle assembly, causes said first end and said second end of said handle assembly to contact said sidewall at said first hole and said second hole respectively, effectively transferring said force to said container, whereby said spraying device is lifted for transporting.

a means of chemical supply comprises a plurality of supply jars disposed within said container, each said supply jar housing one of a predetermined said suite of chemical concentrates, each said supply jar fitted with a threadably sealable lid and a plurality of supply tube assemblies, each said supply tube slidably received thru a hole in its designated said supply jar lid, and said supply tube extending from the base of said container to said rim of said container whereby any of said supply tube assemblies may be joined by releasable fluid connection means to a draw tube extending fixedly from a check valve of said venturi injector;

a chemical draw means comprises siphoning of said chemical concentrate from said chemical supply means to said venturi injector via releasable fluid connection means between said supply tubing assembly and said draw tube;

a chemical dilution means comprises mixing of pressurized fluid flowing thru said tubular handle assembly with said chemical concentrate introduced to said venturi injector by said chemical draw means;

a dilution calibrating means comprises adjusting the size of an orifice integral to said supply tube or integral to said venturi injector;

a chemical dispensing means comprises flow of a pressurized dilute chemical solution from downstream side of said venturi injector through a length of elongate flexible delivery hose in releasable fluid connection with downstream end of said elongate rigid tubular handle assembly to a target surface, whereby said dilute chemical solution is dispensed to said target surface by fluid delivery means which comprises a spray gun or a carpet cleaner's wand.

2. The spraying device of claim 1 wherein one of the chemical concentrates contains a rinsing agent.

3. The spraying device of claim 1 wherein said releasable fluid connection means comprises a quick-disconnect coupling.

2nd IC

4. A spraying device for storing, transporting, and dispensing a plurality of chemicals, comprises:

a container having a base, a sidewall having a rim opposite the base and defining an interior of said container, whereby container is used for storing a plurality of chemical concentrates;

a venturi injector operably connected inline between an upstream source of fluid supply and a downstream fluid delivery means;

a chemical dilution means comprises mixing of pressurized fluid flowing thru said venturi injector with said chemical concentrate introduced to said venturi injector by a chemical draw means;

said chemical draw means comprises siphoning of said chemical concentrate from a releasable fluid connection means between a draw tube extending fixedly from a check valve of said venturi injector to a chemical supply means;

said chemical supply means comprises a plurality of supply jars disposed within said container, each of said supply jars designated a supply tube, each said supply tube joined by releasable fluid connection means to said draw tube; and

a chemical dispensing means comprises flow of a pressurized dilute chemical solution from downstream side of venturi injector to a target surface, whereby a dilute chemical solution is dispensed to said target surface by fluid delivery means which comprises a spray gun or a carpet cleaner's wand.

5. The spraying device of claim 4 wherein said releasable fluid connection means comprises a quick-disconnect coupling.

3rd IC

6. A method of performing hot water extraction cleaning of carpet, comprising the steps of:

- a. providing a cleaning machine capable of delivering hot (>180. degree. F.) and pressurized (40 to 100 pounds per square inch) water through a solution supply hose to a cleaning site;
- b. providing a cleaning machine capable of creating a vacuum through a vacuum hose to said cleaning site;
- c. providing a spraying device for storing, transporting, and dispensing a plurality of chemicals;
- d. providing a container having a base; a sidewall having a rim opposite the base and defining an interior of said container; and a first hole and a second hole in said sidewall of the container; these holes sighting a line across the central vertical axis of the container;
- e. providing an elongate rigid tubular handle assembly of predetermined length comprising a plurality of members joined in series from a first end which passes through said first hole in said sidewall of said container to a second end which passes through second hole in said sidewall of said container with a venturi injector operably connected inline between said first end and said second end of said handle assembly;
- f. providing a chemical supply means comprising a plurality of supply jars disposed within said container; each said supply jar housing one of a predetermined suite of chemical concentrates; each said supply jar fitted with a threadably sealable lid and a plurality of supply tube assemblies; each said supply tube slidably received thru a hole in its designated said supply jar lid; and said supply tube extending from the base of said container to said rim of said container whereby any of said supply tube assemblies may be joined by releasable fluid connection means to a draw tube extending fixedly from a check valve of said venturi injector;

g. providing a chemical draw means comprising siphoning of said chemical concentrate from said chemical supply means to said venturi injector via releasable fluid connection means between said supply tubing assembly and said draw tube;

h. providing a chemical dilution means comprising mixing of pressurized fluid flowing thru said tubular handle assembly with chemical concentrate introduced to said venturi injector by said chemical draw means;

i. providing a dilution calibrating means comprising adjusting the size of an orifice integral to said supply tube or integral to said venturi injector; and

j. providing a chemical dispensing means comprising flow of pressurized dilute chemical solution from downstream side of said venturi injector thru a length of elongate flexible delivery hose in releasable fluid connection with downstream end of said elongate rigid tubular handle assembly to a target surface; whereby dilute chemical solution is dispensed to said target surface by fluid a delivery means which comprises a spray gun or a carpet cleaner's wand.

7. The method of claim 6 wherein a days' worth of chemicals and accessories are stored by the user performing the following steps:

- a. replenishing plurality of said supply jars and said storage containers with a days' worth of chemicals;
- b. positioning plurality of said supply jars within said interior of said container and resting on said base of container;
- c. inspecting job;
- d. stowing any additional accessories needed for job inside said container; and
- e. carrying said container fully loaded to said cleaning site, whereby in just one trip, all chemicals and cleaning related accessories are transported to said cleaning site.

8. The method of claim 6 wherein hose setup is accomplished; by the user extending said solution supply hose and said vacuum hose from their connections at said cleaning machine to a furthest point in said cleaning site.

9. The method of claim 6 wherein said spraying device is connected inline to source of hot and pressurized water, by the user performing the following steps:

- a. positioning said spraying device adjacent to the said solution hose quick disconnect fitting connection furthest into said cleaning site;
- b. disengaging said furthest-in solution hose quick disconnect fitting;
- c. connecting distal end of said solution hose extending from said cleaning machine to said spraying device at a first end male quick disconnect fitting;

- d. disengaging a second end male quick disconnect fitting from a female quick disconnect fitting releasably connected to downstream side of said venturi injector;
- e. stowing said second end in a second end holster bracket fixedly attached to said interior said sidewall of said container; and
- f. passing a loose end of said solution hose just disengaged through said second hole of said container and connecting to said female quick disconnect fitting; whereby connected in this way; said spraying device serves as a single source multi-chemical dispensing device enabling an area to be cleaned circumferentially about the stationary said spraying device.

10. The method of claim 6 wherein a washing step is accomplished by the user performing the following steps:

- a. connecting said draw tube to a supply tube of a prespray supply jar;
- b. attaching said spray gun to distal end of said delivery hose;
- c. siphoning of said prespray from said prespray supply jar to said venturi injector;
- d. mixing of said hot pressurized water with said prespray;
- e. dispensing a diluted prespray to said target surface using said spray gun;
- f. covering said spraying device when left unattended;
- g. agitating carpet fibers with a carpet rake or an electric rotary buffer to help loosen and suspend soils; and
- h. waiting 5-15 minutes to maximize chemical action after agitating and before rinsing.

11. The method of claim 6 wherein a rinsing step is accomplished by the user performing the following steps:

- a. switching said draw tube to a supply tube of a rinsing agent supply jar;
- b. replacing said spray gun with said wand;
- c. siphoning of said rinsing agent from said rinsing agent supply jar to said venturi injector;
- d. mixing of said hot pressurized water with said rinsing agent;
- e. dispensing a diluted rinsing agent to said target surface using said wand;
- f. covering said spraying device when left unattended.
- g. extracting spent chemical, excess moisture, and particulate through said vacuum hose from said target surface to a waste tank at said cleaning machine using the wand; and

12. The method of claim 6 wherein a protecting step is accomplished by the user performing the following steps:

- a. switching said draw tube to a supply tube of a fabric protectant supply jar;
- b. replacing said wand with said spray gun;
- c. siphoning of said fabric protectant from said fabric protectant supply jar to said venturi injector;
- d. mixing of water with said fabric protectant;

- e. dispensing a diluted fabric protectant to said target surface using said spray gun;
- f. covering said spraying device when left unattended; and
- g. agitating fibers with a hand-held carpet rake to help distribute said protectant evenly.

13. The method of claim 6 wherein cleaning is concluded; by the user performing the following steps:

- a. reconnecting said supply hose and said delivery hose as one unit;
- b. returning reconnected said supply hose and said delivery hose along with said vacuum hose to said cleaning machine;
- c. stowing said spray gun; said cover; and said accessories inside said container of said spraying device;
- d. removing said second end from said second end holster bracket;
- e. reconnecting said second end to said female quick disconnect fitting downstream of said venturi injector;
- f. carrying said spraying device back to said cleaning machine; and
- g. storing said spraying device as one compact unit at said cleaning machine, whereby unit is ready to manage, transport, and dispense a said plurality of chemicals needed for every other job to be done that day.

4th IC

14. A kit for retrofitting a hand-held injection sprayer having a venturi injector, the retrofit kit comprises:

a container used for storing; transporting; and dispensing a plurality of chemicals;


a plurality of supply jars disposed within said container;

a plurality of supply tube assemblies, each said supply tube slidably received thru a hole in its designated said supply jar lid; and said supply tube extending from the base of said container to said rim of said container whereby any of said supply tube assemblies may be joined by releasable fluid connection means to between a draw tube extending fixedly from a check valve of said venturi injector to any point along said rim of said container;

a chemical draw means comprises siphoning of a chemical concentrate from said supply jar from which said supply tube assembly extends and in which the said supply tube is in releasable fluid connection means with said draw tube;

a length of elongate flexible delivery hose in releasable fluid connection with downstream end of said venturi injector; and

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a chemical dispensing means comprises flow of pressurized dilute chemical solution from downstream side of said venturi injector thru said length of elongate flexible delivery hose to a target surface; whereby dilute chemical solution is dispensed to said target surface by fluid delivery means comprising a spray gun or a carpet cleaner's wand.

15. The kit of claim 14 wherein said releasable fluid connection means comprises a quick-disconnect coupling.

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